



University Interscholastic League

Computer Science Competition

2013 District 1 Programming Problem Set

JUDGE DATA PRINTOUT - CONFIDENTIAL

I. Instructions

1. The attached printouts of the judge test data are provided for the reference of the contest director and programming judges. Additional copies may be made if needed for this purpose.
2. Printouts must remain CONFIDENTIAL. At the discretion of the contest director, additional copies may also be made and returned to schools when other confidential contest material is returned **after** the meet.

II. Names of Problems

Number	Name
Problem 1	Bears
Problem 2	Dice Roll
Problem 3	Family Tree
Problem 4	Friendly
Problem 5	Lawn Service by Ronnie
Problem 6	Local Warming
Problem 7	Octopusses
Problem 8	Phone Numbers
Problem 9	Qualified
Problem 10	Squares
Problem 11	What's the Difference
Problem 12	x^3

1. Bears

Program Name: Bears.java

Input File: bears.dat

Judges Input File

4

```
E...E..B.M
...B....MM
EECCC.BBMM
..CCCFFBMM
C..F..B..M
B...B..FF.
....FFFFMM
CC..B..MMM
BCCFF...FB
..CC.FF.B.
B...B..B.B
...M...CCC
..B....B..
M.CCC....B
C..FF.BB..
C...C..FC.
..CCFEEFMM
BE..B..CCC
FFBFFFF.B.
B.CC.FB...
BBBBBBBBBB
FFFFFFFFFF
BBBBBBBBBB
.....
CCCCCBMM
BBBBB...FF
EEEEEEEBB
B.B.B.B.B.
.B.B.B.B.B
CCBBCCFF..
B.....B
.B.....B.
..B....B..
...B..B...
....BB....
....BB....
...B..B...
..B....B..
.B.....B.
B.....B
```

Note to Judges: Alternate data sets are bolded for ease of reading.

Judges Output to Screen

```
12
15
42
20
```

2. Dice Roll

Program Name: DiceRoll.java

Input File: diceroll.dat

Judges Input File

```
10
12354643225422
546718453
54567755
85435678439954
345664432
76543579987643
654223456789
7665421345
6432234567890087654
4222345678999986
```

Judges Output to Screen

```
WHITE
BLUE
RED
BLUE
RED
BLUE
WHITE
RED
BLUE
WHITE
```

Random numbers generated for seeds in the judges data:

```
12354643225422
4 20
546718453
3 11
54567755
2 19
85435678439954
3 17
345664432
2 23
76543579987643
3 11
654223456789
1 16
7665421345
1 25
6432234567890087654
3 19
4222345678999986
1 2
```

3. Family Tree

Program Name: Family.java

Input File: family.dat

Judges Input File

```
Mary MOTHER Bob
Bob SIBLING Gus
Joseph FATHER Gus
Gus FATHER Kim
Gus SIBLING Larry
Larry FATHER Debbie
Marge MOTHER David
David FATHER Sandy
Sandy MOTHER Debbie
Herb FATHER Norm
Kim MOTHER Norm
```

Judges Output to Screen

```
1st Generation: Marge
2nd Generation: David Joseph Mary
3rd Generation: Bob Gus Larry Sandy
4th Generation: Debbie Herb Kim
5th Generation: Norm
```

Note: A space at the end of each line is optional.

4. Friendly

Program Name: Friendly.java

Input File: friendly.dat

Judges Input File

```
01:23:45 Computer science is awesome!
10:11:59 I like ICE CREAM.
23:59:59 Cats are evil.
22:00:00 I like dogs.
```

Judges Output to Screen

```
01:23:45 0x4A 0x1D 0x64 0x02 0x7C 0x06 0x6C 0x00 0x29 0x01 0x6A 0x1B 0x6C
0x1C 0x6A 0x17 0x29 0x1B 0x7A 0x52 0x68 0x05 0x6C 0x01 0x66 0x1F 0x6C 0x53
10:11:59 0x13 0x7C 0x36 0x35 0x31 0x39 0x7A 0x15 0x19 0x19 0x7A 0x1F 0x08
0x19 0x1B 0x11 0x74
23:59:59 0x8C 0x8D 0xBB 0x9F 0xEF 0x8D 0xBD 0x89 0xEF 0x89 0xB9 0x85 0xA3
0xC2
22:00:00 0x8F 0x20 0xAA 0x69 0xAD 0x65 0xE6 0x64 0xA9 0x67 0xB5 0x2E
```

Note: The first three output lines in the printed version above stretch across two lines, but are each actually only one line in the actual output. Alternate output lines are bolded for ease of reading. A space at the end of each line is optional.

Input File: lawn.dat

5 15
=
* * *
* * *
* * *

6 20
=
* *
* *
* *
* *
* *

8 18
=
*
*
*
*
* *

16 22
=
* *
* *
* *
* *
* *
* *
* *
* *
* *
* *

10 22
=
* *
* *
* *
* *
* *
* *
* *
* *
* *
* *

5. Lawn Service by Ronnie (cont.)

Judges Output to Screen

```
BBBssssssssssss
BBB*sssss*sss*s
BBBBBBssssssssss
BBBBBBssssssssss
BBBBBB*sssss*ss
```

```
BBBBB*BBB*BBBBBBBBBB
BBBBBBBBBBBBBBBBBBBB
BBBBBBBBBBBBBBBBBBBB
BBBBBBBBBBBBBBB*BBBBBB
BBB*BBBBBBBBBBsBBB*ss
BBBsBBBBBBBBBBsBBB*ss
```

```
BBBBBBBBBBBBBBssssss
BBBBBBBBBBBBBBssssss
BBBBBBBBBBBBBB*ssssss
BBBBBBBBBBBBBBssssss
BBBBBB*BBBBBBssssss
BBBBBBBBBBBBBB*ssssss
BBB*BBBBBBBBBBssss*
BBBsBBBBBBBBBBssssss
```

```
BBBBBBBBB*BBBBBBBBBB*BBB
BBBBBBBBBBBBBBBBBBBBBBBB
BBBBBBBBBBBBBBBBBBBBBBBB
BBB*BBBBBBBBBBBBB*BBBBBB
BBBsBBBBBBBBBBBBBBBBBBBB
BBBsBBBBBBBBBBBBBBBBBBBB
BBB*ss*BBBBBBBBBBBB*BBB
BBBssssBBBBBBBBBBBBBBBB
BBBssssBBBBBBBBBBBBBBBB
BBB*ss*BBBBBBBBBBBBBBBB
BBBBBBBBBBBBBBBBBBBB*BBB
BBBBBBBBBBB*BBBBBBBBBBB
BBBBBBBBBBBBBBB*BBBBBBB
BBBBBBBBBBBBBBsBBBBBBBBB
BBBBBBBBBB*sssBBBBBBBBB
```

```
BBBBBBBBBssssssssssss
BBBBBBBBBssssss*ssssss
BBBBBBBBB*ssssssss*sss
ss*BBB*sssss*ssssssss
sssBBBsss*ssssssssssss
sssBBB*sssss*sssss*sss
ss*BBBssssssssssssssss
sssBBBsss*ssssssssssss
sssss*ssssss*ssss*sss
ssssssssssssssssssss
```

Note: A blank line at the end of the output is optional.

6. Local Warming

Program Name: Local.java

Input File: local.dat

Judges Input File

```
6
2011 32 24 16 26 37 48 52 48 57 56 34 23 32 34 23 46 46 56 52 50 43 34 23 28
36 57 59 52 51 50 54
2009 45 54 52 51 58 67 43 32 31 10 18 45 32 21 21 28 29 35 45 54 53 42 51 53
56 44 42 41 42 32 20
2007 54 65 75 74 72 53 52 42 44 41 37 36 39 28 22 25 27 26 45 45 56 57 58 59
63 52 54 63 63 42 12
2004 67 43 32 31 10 18 45 32 21 21 28 29 35 45 54 53 42 51 53 56 44 42 41 42
32 65 21 31 32 33 20
2000 23 25 57 67 65 63 43 44 32 41 37 36 39 28 22 25 27 26 45 45 56 57 58 59
63 52 54 63 63 42 12
1999 4 28 29 35 45 54 53 42 51 22 23 22 21 43 45 56 65 56 54 53 53 43 50 53
56 44 2 41 42 32 20
```

Note: All six of the input lines in the printed version above stretch across two lines, but are all actually only one line each in the `local.dat` input file. Alternate input lines are bolded for ease of reading.

Judges Output to Screen

```
2011 7 10
2009 8 10
2007 6 16
2004 10 7
2000 8 13
1999 9 11
```

7. Octopusses

Program Name: Octopusses.java

Input File: octopusses.dat

Judges Input File

```
4
2
77583464
8 7
27 10
27 9
27 1
10 6
10 9
57 41
34 14
34 11
14 37
14 45
17 49
50 64
50 62
22 37
22 23
3
46665489
6 8
61 45
60 45
45 37
61 13
60 27
60 39
17 48
17 49
17 50
17 51
4 54
4 63
11 39
40 56
4
43177474
0 0
1
1009465
15 10
3 1
2 1
11 3
44 11
63 18
63 60
62 51
61 50
60 17
43 10
55 27
59 1
63 1
46 20
59 14
27 42
27 64
36 57
32 33
49 63
18 33
18 32
18 19
33 48
9 12
```

7. Octopusses (cont.)

Judges Output to Screen

```
Player B wins after 21 rolls!  
Player B wins after 6 rolls!  
Player A wins after 69 rolls!  
Player A wins after 99 rolls!
```

Random numbers generated for judges data for each seed:

```
77583464  
5 3 4 4 3 6 6 4 4 4 5 6 5 2 1 3 5 4 3 4 3  
46665489  
5 3 4 1 1 4  
43177474  
2 1 3 2 1 5 1 6 3 1 4 3 5 5 3 1 3 3 4 5 2 5 4 3 1 3 4 1 4 6 1 2 5 3 4 3 6 6 3  
5 5 1 4 6 2 4 2 2 6 1 5 6 1 5 3 2 5 1 2 3 4 5 6 4 4 6 1 2 6  
1009465  
2 2 3 4 5 4 2 5 2 5 6 6 1 2 4 2 5 2 5 4 2 6 6 2 2 1 6 6 3 5 3 6 1 6 3 4 6 1 6  
5 2 1 2 1 5 6 3 1 2 2 2 1 1 4 1 4 6 3 3 4 1 6 4 6 6 3 2 5 2 2 3 6 4 5 3 6 1 2  
5 5 6 3 1 2 1 4 2 4 5 5 2 4 1 3 4 5 4 2 4
```

8. Phone Numbers

Program Name: PhoneNumbers.java

Input File: phonenumbers.dat

Judges Input File

```
10
214-234-5647
456.765.3456
(768)567-4536
342-3098
987-345-0000
345.678-4567
765-123-3245
23-453-4509
034-234-1289
546-786-12345
```

Judges Output to Screen

```
214-234-5647
INVALID PHONE NUMBER
INVALID PHONE NUMBER
INVALID PHONE NUMBER
987-345-0000
INVALID PHONE NUMBER
765-123-3245
INVALID PHONE NUMBER
034-234-1289
INVALID PHONE NUMBER
```

9. Qualified

Program Name: Qualified.java

Input File: qualified.dat

Judges Input File

```
15
PASCAL_HS 455 WTC
TURING_HS 365 CTC
WIRTH_HS 570 STC
WASHINGTON_HS 500 LVC
ADAMS_HS 325 WTC
ROBINSON_HS 480 NTC
GATES_HS 400 CTC
JOBS_HS 450 LVC
ABC_HS 520 LVC
EFG_HS 420 NTC
JHL_HS 250 STC
MNO_HS 650 STC
PQR_HS 300 WTC
STU_HS 340 CTC
XYZ_HS 455 CTC
```

Judges Output to Screen

```
PASCAL_HS
WIRTH_HS
WASHINGTON_HS
ROBINSON_HS
GATES_HS
ABC_HS
EFG_HS
MNO_HS
XYZ_HS
```

10. Squares

Input File: squares.dat

Judges Input File

8 9 16 11 18 17

Judges Output to Screen

```

* * * * *
*           *
*   * * * *
*   *       *
* *       * *
* *       * *
*   * * * *
*           *
* * * * *

```

```

* * * * *
*
*   * * * *
* *   * *
* *   * *
* *   * *
* *   * *
* *   * *
*
* * * * *

```

[illegible]

```

* * * * *
*
*   * * * * *
* *
*       * *
* *   * * *
* *   *   *
* *   *   *
* *   * * *
* *   *   *
* *   * * *
* *   *   *
* *   * * *
* *   *   *
* *   * * *
* *   *   *
* *   * * *
* *   *   *
* *   * * *

```

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10. Squares (cont.)

```
*****
*               *
* *****
* *           * *
* * ***** * *
* * *       * * *
* * * ***** * * *
* * * *     * * * *
* * * * *   * * * *
* * * * * * * * *
* * * * * * * * *
* * * * * * * * *
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* * * * * * * * *
* * * * * * * * *
```

```
*****
*               *
* *****
* *           * *
* * ***** * *
* * *       * * *
* * * ***** * * *
* * * *     * * * *
* * * * *   * * * *
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* * * * * * * * *
* * * * * * * * *
* * * * * * * * *
```

Note: A blank line at the end of the output is optional.

11. What's the Difference

Program Name: Whats.java

Input File: whats.dat

Judges Input File

```
5
1300 1500 1200 1600 1800 900 1200 1200 1400 1500 1600 1200 1450 1475 1525
1600 1125 1200 1365 1545 1900 1325 975 1300 1445 1235 1534 1534 1200
1745 2034 2000 2100 2100 1975 1823 2231 1992 2000 2345 2435 1982 2400 1934
1823 2354 2000 2137 2579 1900 2336 2643 1745 2343 2155 2354 2789 2945
9000 8456 5643 8800 8976 8832 9300 8234 9233 9432 7689 8944 9200 9456 9874
9645 9654 8955 8878 8888 9345 8989 6356 7899 8877 8997 9878 9878 5657
5678 6578 6567 4565 5676 8767 9878 5000 5560 6767 7878 6787 5674 8767 7659
7632 6732 6545 6758 5678 8765 7896 5654 7678 7650 8650 7867 7775 6757
567 768 879 987 675 978 786 789 987 786 675 576 675 876 678 879 987 567 345
678 876 567 854 632 345 456 678 567 765
```

Note: All of the input lines in the printed version above stretch across two lines, but are all actually only one line each in the `whats.dat` input file. Alternate input lines are bolded for ease of reading.

Judges Output to Screen

```
-900 5
-575 21
-475 16
-400 11

-898 23
-679 20
-466 14
-453 12

-4221 28
-2813 2
-2633 22
-1743 10

-4878 7
-2242 22
-2002 3
-1113 12

-420 17
-312 4
-309 21
-287 24
```

Note: A blank line at the end of the output is optional.

12. X^3

Program Name: X3.java

Input File: x3.dat

Judges Input File

```
10
1 2 3 2
1 -3 -4 2
1 3 -10 -24
1 3 3 1
1 -2 -3 0
2 -3 -1 0
3 6 3 -6
1 12 -30 225
1 5 2 10
1 -5 0 0
```

Judges Output to Screen

```
-1
NO INTEGER SOLUTION
-4 -2 3
-1
-1 0 3
0
NO INTEGER SOLUTION
-15
-5
0 5
```

Note: A space at the end of the line is optional.